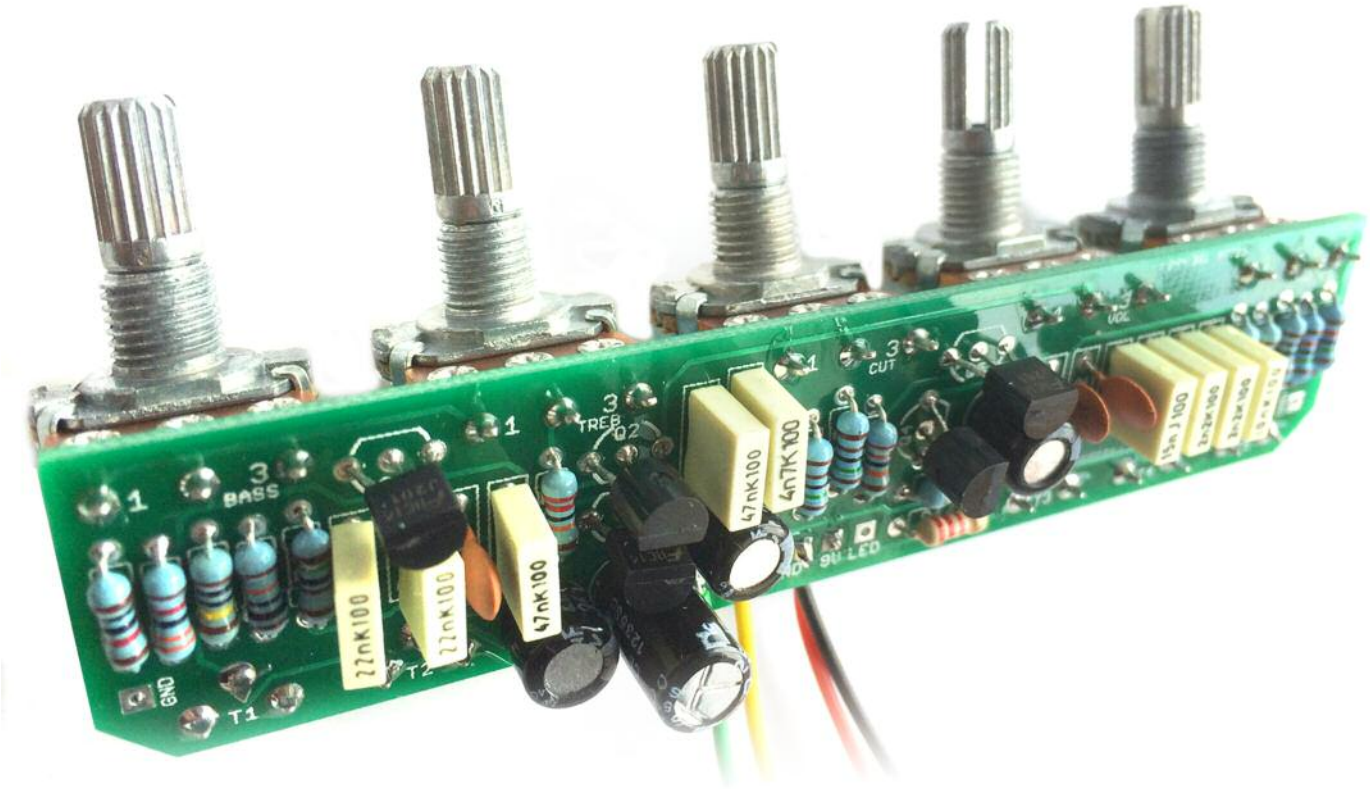

English Channel

ROG's Vox AC30 Top Boost in a box

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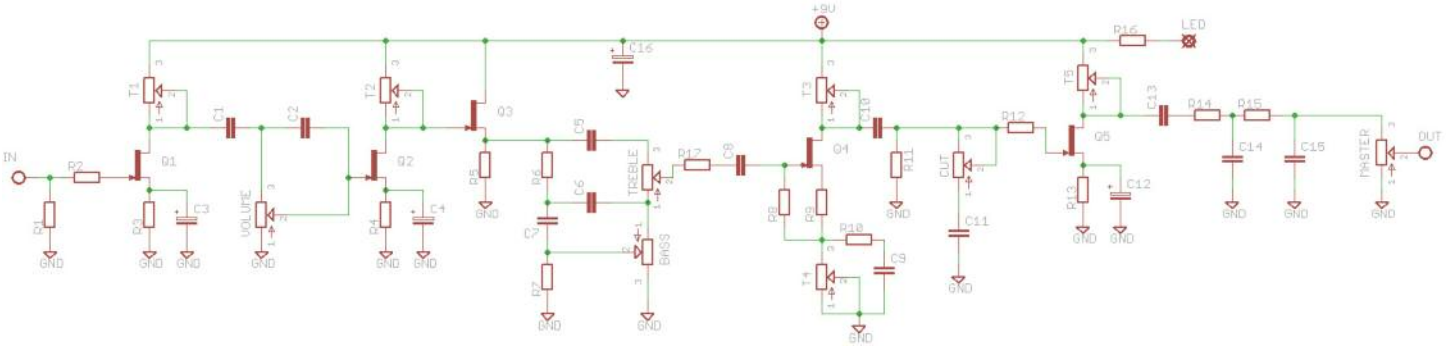
Schematic



BOM

Stock circuit replicates the Brilliant input on the AC30. To go for Normal input, change C1 to 47n.

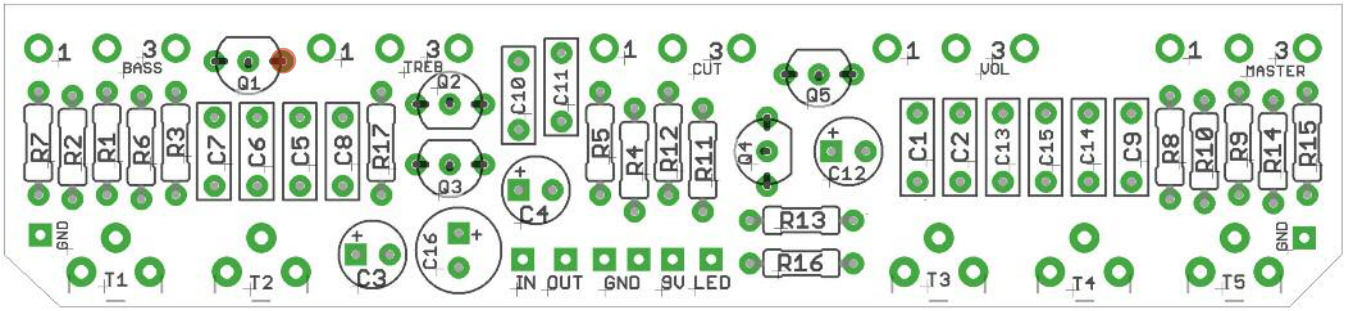
R1	1M
R2	33K
R3	1K5
R4	1K5
R5	10K
R6	100K
R7	10K
R8	1M
R9	1K2
R10	1M
R11	220K
R12	1K5
R13	47R
R14	15K
R15	15K
R16	2K2 (CLR)
R17	220K

C1	470p (47n)
C2	100p
C3	22u elec
C4	22u elec
C5	47p
C6	22n
C7	22n
C8	47n
C9	10n
C10	47n
C11	4n7
C12	22u elec
C13	15n
C14	2n2
C15	2n2
C16	100u elec

T1	100K TRIM
T2	100K TRIM
T3	100K TRIM
T4	22k TRIM
T5	100K TRIM

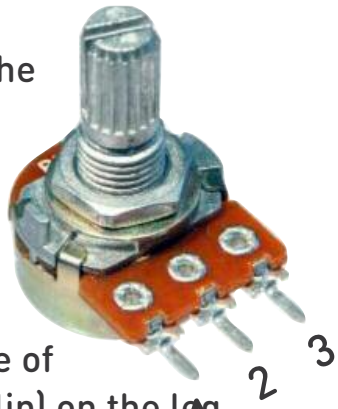
Q1-5	J201

VOLUME	500KA
MASTER	100KA
TREBLE	1MA
BASS	1MA
CUT	250KA



Red dot indicates DRAIN

Snap the little metal tag off the pots to mount them flush in the box.



Pots and trimmers mount on the underside of the PCB as shown below.

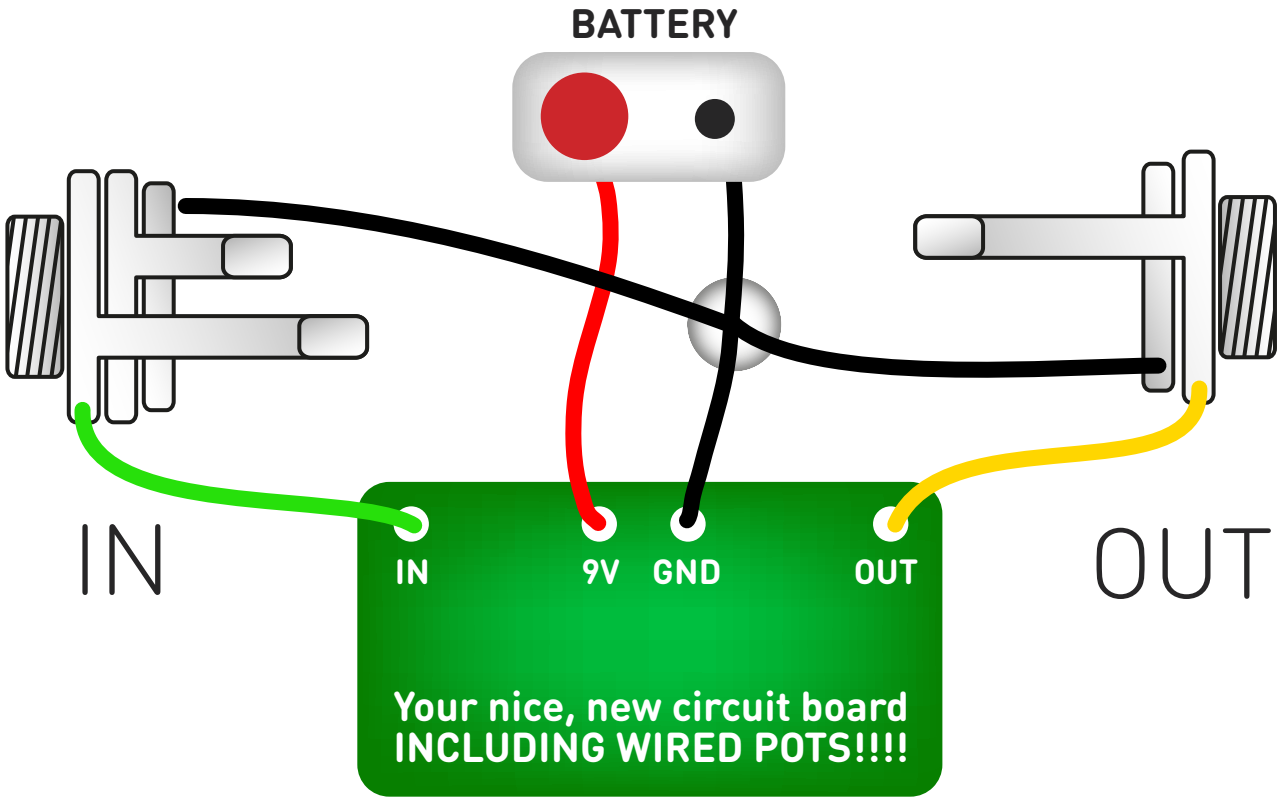
Transistors do NOT like heat. Be very careful when soldering them, and don't leave the iron on them for more than a couple of seconds. Using a heatsink (self-closing tweezers, crocodile clip) on the leg you're soldering will help
avoid frying them. Same goes for the LED.

BIASING

This circuit requires precise biasing of the FETs (J201) to work. To do this, get your Digital Multimeter, set it to DC voltage, with a range that will show 9V (it will probably be 20V range). Place your negative lead on any ground point - preferably clipped to it so you have a hand free. Now, place the positive lead on the DRAIN pin of each FET in turn (left leg if looking at the flat side - see red dot on previous page), adjusting the appropriate trimpot until you get a reading of 4.5V. If you can't manage to get 4.5V, move on to the next FET and go back once you get the others biased. Note: Q3 will be around 9v - there's no adjustment to be made on that one.

Notice you have an odd trimpot - T4 - which is 22K instead of 100K. This is to adjust the voltage at the SOURCE of Q4. Again, negative lead on a ground point, positive on SOURCE. Adjust T4 until you get 1.6V.

Test the board!

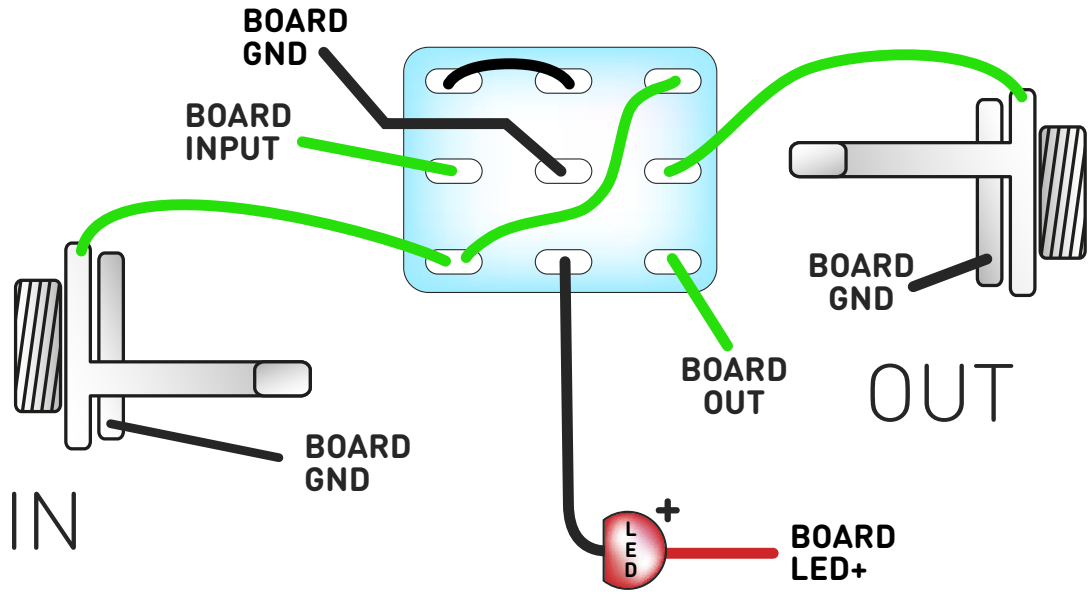


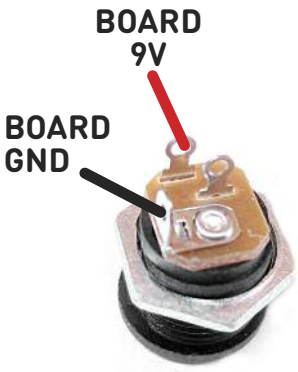
Once you've finished the circuit it makes sense to test is before starting on the switch and LED wiring. It'll cut down troubleshooting time in the long run. If the circuit works at this stage, but it doesn't once you wire up the switch - guess what? You've probably made a mistake with the switch.

Solder some nice, long lengths of wire to the board connections for 9V, GND, IN and OUT. Connect IN and OUT to the jacks as shown. Connect all the GNDs together (twist them up and add a small amount of solder to tack it). Connect the battery + lead to the 9V wire, same method. Plug in. Go!

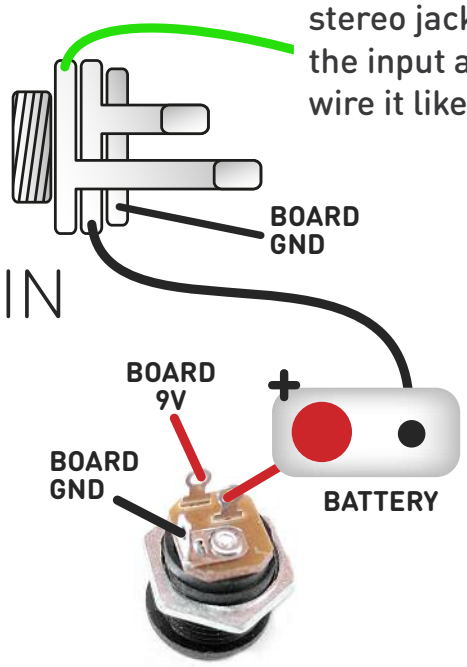
If it works, crack on and do your switch wiring. If not... aw man. At least you know the problem is with the circuit. Find out why, get it working, THEN worry about the switch etc.

Wire it up





If you're adding a battery, use a stereo jack for the input and wire it like this



There are multiple GND pads on the board conveniently placed to make wiring up simpler. Two at the far ends of the board for your jacks, and two in the centre - one for the DC socket, one for the footswitch.

This circuit is standard, Negative GND. Your power supply should be Tip Negative / Sleeve Positive. That's the same as your standard pedals (Boss etc), and you can safely daisy-chain your supply to this pedal.

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